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ABSTRACT

This paper provides a description of a program designed to teach responsible drinking practices in a college student population. The aim of this program is to prevent problem drinking or alocholism in students who report concern about their drinking behavior, and volunteer to participate in a treatment-prevention program aimed at controlling their drinking patterns and rates. It is not recommended for those individuals who might be diagnosed as alcoholic, but only for those who show developing signs of a drinking problem, and who reject the requirement of total abstinence as a treatment goal. Research is presented which provides background support for the prevention program, based on a behavioral model of drinking behavior. A number of specific treatment techniques are described as components of the program, including aversion therapy, assertive training, blood-alcohol level discrimination training, and relaxation training. This paper provides only an overview and description of the program, and no follow-up data are presented. (Author)

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Training Responsible Drinking with College Students

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For the past few months, I have been musing about the following daydream. In my fantasy, I see the lights of a cozy pub through the rain on a wintry Seattle evening. I see the warm orange neon light of an "Oly" ad in the front window, and hear the strains of a country song (perhaps, "Last Night the Bottle Let Me Down") wafting through the swinging doors as I approached the building. Outside the front of this tavern there is a sign which reads, EMPIRICAL BAR, with smaller letters underneath reading, Center for Responsible Drinking Practices. Located in the edge of the University of Washington campus, this is no ordinary bar. Along with the menu, each "customer" receives an Informed Consent Form to sign when he or she arrives, which tells the reader that various projects, with descriptions of each, are being conducted that day in the Empirical Bar. The customer is free to leave or stay; if she/he decides to stay, drinks are sold at reduced rates (a continuous, non-stop Happy Hour). While the bar may look authentic, the careful observer will notice some differences: along with the pool-table and jukebox, there are automated machines which will show the customer's blood-alcohol concentration; each table and booth is equipped with electrode outlets; and the bar mirror is actually a one-way viewing mirror, behind which lies an impressive array of video-tape equipment and computer terminals. Along with research projects dealing with the social drinking behavior of the average, "drop-in" customer, the Empirical Bar also offers special "classes" for selected students, including "DWI's" (individuals with a Driving While Intoxicated offense), college-age problem drinkers, adults who are worried about their drinking behavior, A.A. "rejects" (or those who have rejected A.A.), and the notorious, fast-spreading group known as the "Teen-age Alcoholics".

An impossible, far-out daydream? Perhaps. Yet it was not so many years ago when the idea of administering alcohol to alcoholics in a controlled assessment or treatment program was virtually unheard of (or certainly not spoken of, in traditional alcoholism circles). In 1965, just ten years ago, a paper appeared in Nature which challenged this prohibition. Written by Nancy Mello and Jack Mendelson, the paper's title was, "Operant analysis of drinking patterns of chronic alcoholics" (Mello & Mendelson, 1965). A radical idea--a behavioral assessment of alcoholism which involved the actual observation of the drinking behavior of alcoholics! Stimulated by the pioneering work of Mendelson and Mello, many investigators adopted this direct approach to the study of drinking behavior: In 1970, Peter Nathan, the Chairperson of our symposium today, published three papers on this topic, with such intriguing titles as, "Effects of alcohol on the utility of alcohol for alcoholics and nonalcoholics" (Cutter, Schwaab, & Nathan, 1970). Alcohol was finally back in the picture.

By the early 1970's, most of us on today's panel were the proud owners of simulated bars located in various inpatient research ward settings: Peter Nathan, first at Boston City Hospital, and then at the Alcohol Behavior Research Laboratory at Rutgers University; Mark and Linda Sobell at Patton State Hospital; Dave Goodrick and myself at Mendota State Hospital in Wisconsin. Things have moved very quickly in the past ten years, and the daydreams of the past have become current realities. More and more psychologists are turning their attention to the problem of alcoholism and other drug dependencies, and the field is exploding with new data and innovative treatment techniques.

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We have come a long way from the days when we spent much of our energies administering electric shocks to alcoholic patients in the hope of creating an aversion to alcohol. Today, we are discovering more and more about the nature of drinking behavior itself: its topography, its antecedents and consequences, and its development as a learned behavior, both in alcoholics and social drinkers. Also, today, there is an increasing emphasis on assessment and evaluation of drinking problems and treatment programs, rather than on simply generating and testing new treatment techniques.

Along with this new emphasis, there is an increasing interest on the prevention of drinking problems, especially among younger people who have chosen to drink. By prevention, I am not referring simply to educational campaigns which provide the public with a barrage of films, lectures, media advertisements, pamphlets, and other material which depict the evils of alcohol, the horrors of carwrecks caused by drunken drivers, and Reader's Digest type checklists which tell the reader whether or not she/he is an alcoholic. I am talking about teaching people who have chosen to drink the principles of responsible drinking. This is not teaching people to drink, it is teaching people how to drink, when and if they choose to drink. That's the ultimate goal of the Empirical Bar daydream.

We've got to start thinking about alternative ways to handling drinking problems. The limitations of the existing approach, the traditional disease concept of alcoholism, were driven home to me recently when I was approached by a professional alcoholism worker in Seattle about the growing problem of adolescent drinking. His theoretical orientation was heavily influenced by the teachings of Alcoholics Anonymous, and he had always assumed that the disease of alcoholism was basically a progressive illness which took several decades to develop, a belief which was based on the fact that most of the alcoholics he had seen previously were males in their middle-forties. Suddenly, he was confronted by numerous court referrals involving drinking offenses committed by adolescents (illegal possession of alcohol, public intoxication, and related charges). What did this mean? He told me that he now believed that there was such a thing as instant alcoholism (a disease which took hardly any time to develop), and that his clients were none other than TEENAGE ALCOHOLICS! He came to me because he wanted advice on setting up a treatment program with these youths which centered around confronting them with the idea that they were, in fact, alcoholics, and could never drink again. To enforce this treatment goal, he was planning to convince them to take Antabuse! Imagine, asking someone to take Antabuse daily for upward of 50 years! I told him that he should consider another approach, or he might end up with a dead teenage alcoholic on his hands, someone who impulsively tried to see if they could drink over Antabuse, perhaps on a dare from friends.

Background and Rationale for the Prevention Program

What is this other approach? What is the underlying rationale for a secondary prevention program for younger individuals who appear to be developing a drinking problem, and how can this be presented in such a way as to be acceptable to society, not to mention state and federal funding agencies? The rationale which I like to present goes something like this. Alcoholism is a behavioral problem of considerable significance. Despite years of research and treatment experience, very little is currently known about the etiology and underlying mechanisms associated with alcoholism (Blum & Blum, 1974; Roebuck & Kessler, 1972). Currently, the most popular theoretical approach is to consider alcoholism a "disease," mediated by physiological addiction to alcohol consumption (cf., Jellinek, 1960).

The treatment implications which stem from the medical model of alcoholism suggest that total abstinence from alcohol is the only viable goal for treatment. While the goal of total abstinence may be appropriate for some "chronic" alcoholics (typically an individual with many years of prior uncontrolled drinking), it may not be as appropriate for the younger person who has chosen to drink socially and wishes to avoid the problems associated with heavy drinking behavior. In recent years, treatment procedures have been developed from a theoretical perspective which emphasizes the environmental and learned determinants of drinking behavior. From this viewpoint, problem drinking is defined as a acquired behavior which can be accounted for by the basic principles of learning (see reviews by Mello, 1972; Nathan, 1975; Vogel-Sprott, 1972). One important assumption of the behavioral model is that if both normal and problem drinking are learned behaviors, then the individual who is experiencing problems associated with drinking can be taught to "re-learn" responsible drinking habits. Treatment procedures which derive from this assumption may provide an alternative for those persons who cannot or will not accept total abstinence as a treatment goal.

In the past several years, drinking behavior has increased dramatically among younger people. Recent studies have shown an increase in drinking among both high school (e.g., Prendergast & Schaefer, 1974) and college students (e.g., Hanson, 1974). A recent survey of national drinking practices indicates that drinking problems are fairly common among American men aged 21 to 59, and especially so among the 21-24 year olds (Cahalan & Room, 1974). These surveys suggest that problem drinking develops at a relatively early age, and that the chronic condition of alcoholism is not usually detected until much later in the individual's life. Thus, while it has been shown that about 68% of adult Americans consume alcoholic beverages, only 9% of this group can be considered to be problem drinkers (those who experience significant life problems associated with alcohol use); and only a subset of these problem drinkers are ever classified or diagnosed as alcoholics (Cahalan, Cisin, & Crossley, 1969). In terms of prevention, the group which would seem most likely to benefit from intervention would be the younger drinkers (in the 18 to 24 age range), who are beginning to show signs of developing problems in relation to their drinking.

For several years now, we have been conducting research on the determinants of drinking behavior in college students at the University of Washington. The goals of this research have been as follows: (a) to investigate the parameters of "normal" drinking by isolating factors which increase or decrease the probability of drinking behavior; (b) to determine characteristics of drinking behavior which would discriminate between normal drinking and problem drinking or alcoholism--i.e., to discover the ways in which social drinkers control their drinking behavior, and to look for behavioral predictors which are associated with the progression of problem drinking, as steps toward the eventual development of a <u>prevention</u> program to be used with individuals who are in danger of becoming alcoholic drinkers; (c) to develop behavioral methods which can be used in treatment programs with alcoholic patients; and (d) to develop a working theoretical model of drinking behavior (both normal and problem drinking) based on behavioral principles. The following is a brief review of our findings to date.

Much of our research has tested the assumptions of the "tension-reduction" hypothesis which has been advanced as a motivational theory of drinking behavior. This hypothesis states that drinking is motivated by the tension-reducing properties of alcohol, and that the experience of tension or stress will increase the probability of drinking (cf. Cappell & Herman, 1972).

The approach we have taken in our research program has involved the [illegible] manipulation of emotional states typically associated with "tension" (e.g., fear of pain, evaluation apprehension, social pressures, etc.), and to assess the effects of these manipulations upon drinking behavior in a standardized laboratory procedure (Marlatt, 1975a). The subjects we have used in most of these studies have been college students who are classified as social drinkers on the basis of their responses to a drinking habits questionnaire developed by Cahalan, Cisin, and Crossley (1969). Drinking behavior is observed directly in the laboratory by having the subjects participate in a "taste-rating task," designed as an unobtrusive measure of alcohol consumption (Marlatt, 1973). In this task, the subject is told to make discriminations of the taste characteristics of various alcoholic beverages. The subject is given an ad-lib supply of each beverage and is told to sample as much or as little as she/he needs to make the required discriminations. In fact, this purpose is really a "cover story" to explain the necessity of having subjects drink in a laboratory setting. The actual amount of alcohol consumed by subjects in the tasting task serves as our main dependent measure of consumption. The task has been found to be a reliable measure of consumption over time periods: test-retest reliability over a six-week period is .72 for male social drinkers (Marlatt, Pagano, Rose, Marques, 1975). In addition, consumption rates on the task have been found to discriminate between alcoholic and nonalcoholic drinkers (Higgins & Marlatt, 1973; Marlatt, Demming & Reid, 1973).

The findings of our recent studies can be summarized as follows. (a) Expectancy effects can override the physiological effects of alcohol in the determination of consumption rates: both alcoholics and social drinkers who expect they are sampling an alcoholic drink will consume more beverage than when they are expecting a nonalcoholic beverage, regardless of the actual alcohol content of the drink (Marlatt, Demming, & Reid, 1973)' (b) Expectancy effects also account for most of the variance in the relationship between alcohol consumption and the expression of aggressive behavior: male social drinkers who expect that they have been given alcohol behave in a more aggressive manner than subjects who are led to believe they have been given a nonalcoholic drink, again regardless of the actual alcohol content of the beverage (Lang, Goeckner, Adesso & Marlatt, 1975). Both of these studies emphasize the importance of mediating cognitive factors in the determination of drinking behavior; (c) Manipulation of tension, in the form of fear of physical pain (threat of electric shock) does not increase subsequent alcohol consumption for either male alcoholics or social drinkers (Higgins & Marlatt, 1973). However, manipulation of social fears (anticipation of interpersonal evaluation) does significantly increase drinking behavior in male social drinkers (Higgins & Marlatt, 1975); (d) For both male and female social drinkers, instigation of feelings of anger (being frustrated and angered by a confederate subject prior to drinking) leads to a significant increase in alcohol consumption; but if the subject is given an opportunity to express the anger first (by retaliating against the provoker), drinking is significantly reduced (Marlatt, Kosturn, & Lang, 1975); and (e) Male social drinkers who are exposed to a confederate subject who models either heavy or light alcohol consumption in the taste-rating task show a significant modeling effect (their drinking follows the pattern exhibited by the model drinker), indicating the importance of social influence and imitation as determinants of drinking (Caudill & Marlatt, 1975); and (f) For males who are heavy social drinkers, training in a program of relaxation which is practiced regularly (muscle relaxation, meditation, or quiet self-directed reading activities) leads to 50% reduction in daily alcohol consumption, compared to base-line consumption rates and a no-treatment control Group (Marlatt, Pagano, Rose, & Marques, 1975).

Through a close assessment of the determinants of social drinking, and by comparing the drinking behavior of social drinkers and alcoholics, we have developed a treatment rationale (described below) which is now being subjected to careful clinical trials with selected individuals who wish to participate in a program of secondary prevention aimed toward the development and maintenance of responsible drinking behaviors.

Development of a Secondary Prevention Program for College Students.

The details and procedures for our prevention program were initially developed in a graduate level seminar/practicum course which I taught this spring and summer (1975) at the University of Washington. Seven graduate students in clinical psychology participated in this course, and helped to shape the direction of the program to be described. One of the purposes of the course is to provide the students with direct clinical experience in working with two "excessive behavior" problems, problem drinking and obesity. During the course itself, students saw clients of both types, in order to provide us with information about the relative similarities and differences in the assessment and treatment of drinking and eating problems. In this paper, I will focus only upon the program as it applied to clients who reported a drinking problem. The effectiveness of our treatment interventions is being assessed by the use of an operant single-subject design, using each client as his/her own control. Thus, the overall program for each client is divided into three phases: baseline assessment, treatment intervention (the prevention program itself), and a follow-up phase. As we are currently still seeing all of our clients in the program, at this time I can only describe the procedures we have been using to date. Further evaluation of the program's effectiveness based on follow-up data will be available at a later date.

Recruitment of subjects.

Potential clients are recruited from the following sources: from students who have applied for help with a drinking problem to the University of Washington Counseling Center, Center for Psychological Services and Research, or the Student Health Service (on a prearranged referral basis--none of these student clinics currently have treatment programs designed for problem drinkers); and from students who have filled out the Drinking Habits Questionnaire (Cahalan & Room, 1974), and who are thus designated as heavy social drinkers. Potential subjects are carefully screened for eligibility (described below), and those who qualify are told in complete detail about the prevention program which is available, and about alternative treatment programs which may be available to them. Those who volunteer to participate are asked to sign an informed consent form describing the requirements of the program. Both male and female students, who are at least 21 years of age (the legal drinking age in the State of Washington) are eligible as subjects.

Intake and screening procedures.

Each potential subject is thoroughly evaluated for eligibility in the program. A clinical graduate student in the practicum course is assigned to each potential subject for the initial assessment period. Clients are then asked to participate in an extensive intake and screening procedure conducted at Center for Psychological Services and Research, the training clinic in our Doctoral program.. Clients are asked to make application to the Center in the same manner as all clients seen at this clinic. This procedure is followed in order to ensure that each client is fully covered by the clinic procedures and regulations (i.e., insurance coverage, confidentiality of all records,

exchange of information forms, continuous availability of qualified supervisor, complete clinic records, etc.).

Prospective clients participate in a comprehensive intake procedure which is given to all clinic clients. The intake process consists of from three to four hours of history-taking (covering all aspects of the client's life situation), plus the administration of appropriate psychological tests (e.g., the MMPI). The intake sessions are video-taped and supervised by members of the clinical faculty. In addition to the general life history, detailed information is obtained about the client's drinking history and current drinking patterns. A standardized behaviorally-oriented questionnaire, The Drinking Profile (Marlatt, 1975b), is also administered as part of this process. This questionnaire yields detailed information about the respondent's drinking history, current status, and associated problems.

Following the intake procedure, each client is evaluated in a Clinic Staffing session, attended by the clinic faculty, clinical graduate students, and all personnel associated with the prevention project. Clients who participate in the prevention program must be relatively free from other serious psychological or physical problems. Clients who do not qualify for inclusion in the prevention program are referred to other treatment agencies or are offered conventional therapy in the Center (for those with other psychological problems which require attention). Eligible subjects then enter the treatment phase of the prevention program.

Baseline assessment period.

For the first two weeks following the intake and screening procedure, the client is asked to keep a detailed "drinking diary," in which she/he is asked to record on a daily basis the following information: for each drink consumed, a notation is made of the time at which drinking occurs, a description of the situational factors (antecedents and consequences, location, presence of others, etc.), and a precise record of the type and amount of alcohol consumed. In addition, an attempt is made to enlist the cooperation of a "significant other" individual (family member, close friend, roomate, etc.) who may be able to provide an independent collateral source of information about the client's drinking behavior during the course of the study. Daily drinking records are transformed into standard units of consumption (ounces of pure alcohol), and a situational analysis of drinking behavior is derived from these data. In addition, each client is asked to participate in a taste-rating task (described above), in which they sample from a variety of their most frequently consumed alcoholic beverages. The tasting task is given in order to provide a direct behavioral assessment of alcohol consumption, to serve as a comparison with follow-up data obtained with this measure. Each client is seen on a twice weekly basis during the initial assessment period.

Components of the Prevention Program.

On the basis of all the intake and baseline assessment information, the treatment team plans an individualized prevention program for each client. Specific components of the program are selected to match the client's needs as determined by the nature of the drinking pattern and the function of each treatment procedure. This format is best described as a "broad-spectrum" approach in the behavior therapy literature (cf. Hamburg, 1975; Lazarus, 1971). One or more of the following components is typically included in each client's prevention program.

Behavioral contracting and limit-setting.

A contract is drawn up between the therapist and the client which specifies the arrangements (terms and conditions) of the treatment program, and the agreed-upon goals of treatment outcome. Although no fee is currently being charged for any aspect of the program (nor are clients paid for their participation), some clients may be asked to submit a monetary deposit (based on their availability of funds) which would be returned to the client at specified intervals in return for submitting data and other information required to assess the effectiveness of the program. Case studies have reported the effectiveness of such contracting arrangements with alcoholic parents (cf. Miller, 1972).

Blood-alcohol discrimination training. The aim of this procedure is to train clients to discriminate their own blood-alcohol levels, as a means of monitoring alcohol intake and determining limits of consumption. The clients participate in several closely supervised sessions, in which they are administered alcohol in varying amounts and asked to estimate their blood-alcohol level. Immediate feedback as to the actual level is given following each estimate, as determined by a Breathalyzer apparatus. In the second stage of training, the Breathalyzer feedback is gradually faded out as the client achieves accuracy in estimating blood-alcohol levels. Generalization effects are monitored in follow-up sessions. The procedure requires the client to respond to his/her proprioceptive and physical cues which are associated with different blood-alcohol concentrations. Blood-alcohol discrimination training has been used successfully by several investigators as a treatment procedure with alcoholics and social drinkers (cf., Lovibond & Caddy, 1970; Silverstein, Nathan, & Taylor, 1974; Vogel-Sprott, 1975). Training sessions are video-taped, so that the client may later observe his/her behavior and signs of physical impairment under the influence of alcohol (Schaefer, Sobell, & Mills, 1971).

Aversion therapy.

For some clients, the ability to control intake of alcohol in specific situations may be enhanced by the use of aversion therapy procedures (see review by Davidson, 1974). This technique may be most effective in countering strong urges to drink in situations most often associated with heavy consumption. The client is asked to visualize the specific situation, and to report when the urge to drink achieves maximum intensity. A physically harmless but painful electric shock is administered to the client's forearm (maximum intensity = 5 milliamps) at this point for 500 msecs. I have found this to be an effective countering measure for "irresistable" urges in both heavy drinkers and smokers, based on my own clinical practice. The use of electric shock is only given to volunteers who are given complete prior information about the technique.

Assertive training.

Our own research has clearly indicated that both feelings of frustration and anger and social pressure influences are potent/determinants of drinking behavior. An assertive training program is a structured series of exercises in which the client is taught social skills associated with assertive behavior. The client is taught how to express feelings in a direct, assertive manner when faced with a frustrating experience or with social pressures to drink. Lazarus (1971) and others have described the details of assertive training procedures which have been used with a variety of behavioral problems.

Relaxation training.

Heavy social drinkers report a significant decrease in drinking rates when they practice a specific relaxation exercise on a daily basis (Marlatt, Pagano, Rose, & Marques, 1975). Clients who are tauhgt the exercise are able to practice it when they are feeling tense or anxious, which may decrease their desire for alcohol as a means of reducing tension. Progressive muscle relaxation and meditation exercises may be the most effective techniques for this purpose. For clients who experience fear or anxiety in specific situations which may be associated with drinking, systematic densensitization training may also be given.

For many of the above techniques, the client is taught to implement the treatment procedures as self-control strategies following completion of the formal training period. By following this approach, it is hoped that the client will be able to serve his own "therapist" and make use of the appropriate technique (e.g., to become relaxed, etc.) when necessary in the natural environment.

I recently became aware of a self-help manual written for individuals who desire to exercise control over their drinking behavior. This manual, written by William Miller and Ricardo Munoz at the University of Oregon (Miller & Munoz, 1975) will be published by Prentice-Hall in 1976 as part of a series of volumes on self-control procedures. Although the authors do not provide data on the effectiveness of the manual, a serious criticism in view of the fact that it will be offered for sale to the general public (including, no doubt, members of A.A. and other politcally active groups), it contains a good deal of practical information on such matters as setting limits on consumption, how to slow down drinking and to refuse drinks, how to pre-plan for anticipated drinking occasions, how to keep records of one's drinking behavior, and on learning a number of behavioral alternatives to drinking (e.g., self-desensitization, assertive training). We are currently piloting this manual with several of our clients, in order to partially assess its usefulness in our own prevention program.

Follow-up assessment.

After the eight-week treatment intervention program, each client will be followed up continuously for a four-month interval. The assessment procedures to be given during this time period will include: daily monitoring of all alcohol consumed, random blood-alcohol "probes" (in which the patient will be administered a blood-alcohol test, within an hour of notifying the client: these tests will be given in the client's own setting whenever possible); reports of the client's drinking patterns as provided by the significant other; readministration of the taste-rating task at the beginning and end of the four-month follow-up period; readministration of the Drinking Habits Questionnaire and the Drinking Profile as self-report estimates of general drinking behavior; in-depth interviews with the client at monthly intervals to gather information about all aspects of the client's drinking behavior, life situation, and other demographic data. During this entire period, each client will be contacted at least once each week to monitor progress, obtain recorded data, and recommend alternative treatment should this become necessary for those clients who are not helped by the program.

So that is a description of our ongoing prevention program. We are still in the early stages of this research program, and I have little data to report at this point, other than for a few preliminary cases. Yet I feel very optimistic about our program, because it provides a viable alternative to the rather pessimistic view offered by adherents of the disease model of alcoholism-- that the only goal for either treatment or prevention of drinking problems is to stop drinking altogether. Others who are developing similar prevention programs for college students, such as my colleague, Warren Garlington at Washington State University, share in this optimism. In the long run, we may find that our assumptions are incorrect, and that responsible drinking is an inappropriate goal in a secondary prevention program. That conclusion will lie with the follow-up and outcome data on our clients, and will not be made on the basis of pre-existing theory and treatment policies.

We may still be a long way from reality of the Empirical Bar, but we are moving closer. As psychologists, we need to develop our understanding of drinking behavior as it exists in the natural or semi-natural environment. John Reid, at the Oregon Research Institute, has been working on an observational coding system which can be applied in a live bar setting. He has demonstrated the usefulness of this system in a study of modeling factors as they affect the drinking rates of customers attending a bar in Eugene, Oregon (Reid, 1975). Once we have a fuller understanding of the parameters of normal or social drinking, and know more about the development of drinking problems within a subset of individuals who began as social drinkers, we will be in a much better position to understand the problem of alcoholism. The foot is in the door.

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